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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



Serial Application of: Gupta *et al.*

Serial No.: 09/964,919

Filed: September 27, 2001

For: Novel Red-Shifted Triazine  
Ultraviolet Light Absorbers

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Examiner: V. Balasubramanian

Group Art Unit: 1624

Attorney Docket: 01005-00

May 29, 2003

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**DECLARATION OF DR. RAM GUPTA UNDER 37 C.F.R. §1.132**

I, Dr. Ram B. Gupta, do hereby state and declare that:

I am one of the listed inventors of the subject matter claimed in the above-identified application.

I received a Ph.D. degree in Organic Chemistry from Delhi University in 1979, and served as a Lecturer at Rajdhani College of Delhi University from 1979 to 1981. I conducted Postdoctoral research in synthetic organic chemistry at Fordham University and Hunter College (City University of New York) from 1981 to 1989. I provided research training and supervision assistance to seven (7) Ph.D. candidates at Delhi University and Hunter College through 1989.

I have a total of twenty-nine (29) years of academic and corporate research experience in synthetic organic chemistry. I have been employed by Cytec Industries Inc. (or a predecessor thereof) since 1989, and have been engaged in research in organic synthesis and characterization in the course of my employment. For the past seven (7) years, I have primarily conducted research in the area of UV absorbers and stabilizers. My current position is as a Research Fellow for the Polymer Additives Department of Cytec Industries Inc.

I have authored or co-authored thirty (30) research publications on several aspects of organic synthesis and characterization in various internationally recognized journals, and am an inventor or co-inventor on approximately forty (40) U.S. Patents.

I reviewed the present Final Office Action and U.S. Patent No. 3,118,887 to Hardy *et al.* (Hardy) that was cited against Claims 1 to 6 of the present application. It is my understanding that the Examiner contends that Hardy teaches the equivalency of mono and tris(2-hydroxynaphthyl)-triazines by the definition of X,Y and Z in Formula I at col.1, line 60. It is also my understanding that the Examiner contends that it would have been obvious to one skilled in the art to make a mono(2-hydroxynaphthyl)-triazines based on the disclosure of tris(2-hydroxynaphthyl)-triazines (Example 8 in Hardy) and the procedure taught in Hardy at col. 2, line 64 to col. 3, line 13.

However, the Examiner's basic assumption regarding the equivalency of mono and tris(2-hydroxynaphthyl)-triazines is incorrect. I directed the synthesis of tris(2-hydroxynaphthyl)-s-triazine similar to the procedure of Example 8 in Hardy. The resulting

tris(2-hydroxynaphthyl)-s-triazine compound was crystallized from N,N-dimethylformamide (DMF) and analyzed by liquid chromatograph-mass spectrometer (LCMS). The UV spectrum of the tris(2-hydroxynaphthyl)-triazine was measured and compared to the spectrum of the mono(2-hydroxynaphthyl)-triazine compound in Example 3 of the present application. Each UV spectrum was measured in the same solvent and at the same concentration (1mg/100 mL THF). This comparison is presented in attached Exhibit A.

One important region for a UV absorber is the region between 280 and 320 nm. The region is termed the UV-B region and screening this region is important in preventing the sunburning of human skin, (e.g., see col. 1, lines 8 to 11 of attached U.S. Patent No. 5,741,905), and the degradation of various polymers including nylon, polycarbonate, polyethylene, polypropylene, PMMA and ABS. Thus, it is important for a good UV absorber to have a strong UV absorbance in the UV-B region for application in cosmetics and a variety of polymers. As demonstrated by Exhibit A, the symmetrical tris(2-hydroxynaphthyl)-triazine compound has low UV absorbance in the UV-B region. It is my opinion that the tris(2-hydroxynaphthyl)-triazine compound would be a poor candidate for a UV absorber because of its weak absorbance in the UV-B region. In contrast, the mono(2-hydroxynaphthyl)-triazine of Example 3 shows a maximum UV absorbance in the important UV-B region as well as red-shifted characteristics in the higher wavelength ranges. Therefore, this data demonstrates that the Examiner's basic assumption regarding the equivalency of mono and tris(2-hydroxynaphthyl)-triazine compounds is incorrect.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Ram B. Gupta  
RAM B. GUPTA

Date: 05/29/03

EXHIBIT A

LECH DEMER 19005303

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Comparison of UV Absorption Spectrum  
DECEMBER

